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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,348	12/31/2003	Laurence Warden	11032-041-999	9885
20583	7590	08/31/2006	EXAMINER	
JONES DAY 222 EAST 41ST ST NEW YORK, NY 10017			KIM, ELLEN E	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 08/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/749,348

Applicant(s)

WARDEN ET AL.

Examiner

Ellen Kim

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This is responsive to Applicant's amendment filed on 6/26/06.

#### ***Response to Arguments***

Applicant's arguments filed 6/26/06 have been fully considered but they are not persuasive. Applicant argues that Stimpson et al requires that "the refractive index of the waveguide must be greater than the refractive index of the sample fluid [second material in which the particles are distributed]".

Examiner notes that Stimpson et al clearly teach at column 9, lines 10-20 that the light scattering particles are disposed across the entire waveguide. Therefore, the particles are clearly distributed in the second material, which has a greater refractive index as Applicant claims in the claim. Examiner does not agree with Applicant's argument.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-13, 15- 21, and 23-40 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Stimpson et al [USPAT 5,843,651].**

Stimpson et al disclose a waveguide 30 [fig. 2A] comprising

A first optically transmissive material 32 [fig. 2C] that forms an interface with a second optically transmissive material 46, wherein the refractive index of the second material is greater than or equal to the refractive index of the first material [column 8, lines 39-49]; and

One or more populations of scattered light detectable particles of a dimension between about 1 and about 500 nm [column 14, lines 15-29] inclusive that are bound to an analyte column 4, lines 13-24], wherein the particles are distributed in the second material such that the particles are illuminated by non-evanescent light 54 and produce detectable scattered light in the waveguide.

In re claim 2, Stimpson et al teach at column 1, line 13 that one or more analytes can be analyzed.

In re claims 3 and 4, Stimpson et al teach in abstract that the metal and gold can be utilized.

In re claim 5, since Stimpson et al show all the claimed structural limitation, it is clear that the particles inherently exhibits plasmon resonant light scattering.

In re claim 6, note that Applicant claims all the possible shape, therefore, the particle of Stimpson et al inherently meet the claimed limitation.

In re claim 8, since Stimpson et al show all the claimed structural limitation, it is clear that the particle in the Stimpson et al reference inherently aggregates, and the

Art Unit: 2874

light scattered by the aggregates is detectably different from light scattered by individual particles.

In re claims 9 and 10, Stimpson et al teach at column 13, lines 57-end the uses of probe and the secondary binding pairs.

In re claim 11, Stimpson et al teach at column 14, lines 30-53 that the use of secondary binding pair, such as hapten.

In re claim 12, Stimpson et al teach at column 1, lines 9-17 the DNA molecule.

In re claim 13, it is clear that the inner surface of the waveguide plate 32 is adapted to couple light into the waveguide 32.

In re claim 15, it is clear that most of the waveguide is "adapted" to couple light to any optical device.

In re claim 16, Stimpson et al teach in abstract that glass is used.

In re claim 20, Stimpson et al show in fig. 2C the third layer 34.

In re method claims, the claimed method steps are inherently shown by the Stimpson et al reference, and the similar claimed limitations are discussed above in apparatus claim rejections.

In re claim 25, it is clear that by depositing the sample and the particles on the surface, the contacting is occurred.

In re claims 28 and 29, it is clear that Stimpson et al teach at column 10, lines 43-46 that the reaction surface can be coated on ones side of the waveguide element, i.e., before, forming the waveguide.

In re claims 30 and 35, since Stimpson et al show all the claimed structural limitation, it is clear that the claimed result of the device is inherently shown by the Stimpson et al reference.

In re claims 31, 39, 40, Stimpson et al teach at column 8, lines 64-end all the different light sources including laser.

In re claim 32, it is clear that only one waveguide element can be utilized [column 10, lines 43-46].

In re claims 36, 38, Stimpson et al teach at column 19, lines 45-56 that the light intensity is measure with the photodiodes.

In re claim 37, Stimpson et al teach at column 19, line 47 that the image processing step is utilized, therefore, the claimed method steps, such as forming, and viewing, are inherently shown by Stimpson et al reference.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claim 22, 41, and 43-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stimpson et al.**

In re claim 22, Stimpson et al discloses every aspect of claimed invention except for the claimed second layer material. It would have been obvious to the ordinary skilled person in the art at the time the invention was made to modify to include the claimed material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

In re claims 41, 43, Stimpson et al disclose every aspect of claimed invention except for the waveguide holder which comprising X and Y stages.

It would have been obvious to the ordinary skilled person in the art at the time the invention was made to modify the Stimpson et al device to include the waveguide holder

comprising X and Y stages for the purpose of easier and stable measuring steps of the device. It is clear this would improve the device.

In re claims 44, 46, 47, Stimpson et al teach at column 8, line 64 - column 9, line 9 all the different light sources including laser, lens, and filter.

In re claims 45, Stimpson et al teach at column 19, lines 45-56 that the light intensity is measure with the photodiodes.

In re claim 48, it is clear that the channel width 46 is shorter than the waveguide element 32, i.e., the second layer of the waveguide terminates before the interface with the first layer.

**Claims 14 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stimpson et al as applied to claim 1, 41 above, and further in view of Evans [USPAT 6,775,427].**

Stimpson et al disclose every aspect of claimed invention except for the grating coupled to the surface of the waveguide.

Evans teaches the use of the grating on the surface of the waveguide for the purpose of coupling to normal direction of the waveguide.

It would have been obvious to the ordinary skilled person in the art at the time the invention was made to modify Stimpson et al device to include the grating on the surface of the waveguide as shown in Evans's device for the purpose of coupling to

another optical device as shown in Evans's reference. It is clear that this would improve the device.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

Art Unit: 2874

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

For all official patent application related correspondence for organizations reporting to the Commissioner of Patents:

- Correspondence that is transmitted by facsimile must be directed to the central facsimile number, (703) 872-9306.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen Kim whose telephone number is (571) 272-2349.

The examiner can normally be reached on Monday through Thursday.

Ellen E. Kim  
Primary Examiner  
August 25, 2006/EK

A handwritten signature in black ink, appearing to be 'E. Kim', written over a horizontal line.